UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

November 10, 1977

Docket Nos. 50-269
50-270
and 50-287

Duke Power Company
ATTN: Mr. William O. Parker, Jr.
Vice President - Steam Production
422 South Church Street
P. O. Box 2178
Charlotte, North Carolina 28242

Gentlemen:

During the week of October 3, 1977, we visited the Oconee Nuclear Station for the purpose of observing the plant features pertinent to the fire protection program. At a meeting with you on October 7, 1977, we identified requests for additional information (RFAI) and our positions which require a docketed response regarding certain aspects of your fire protection program. These RFAI and positions are forwarded as Enclosures 1 and 2, respectively to this letter. Enclosure 3 is a list of the October 7, 1977 meeting participants.

You indicated that your responses to these RFAI and positions would be provided in about three weeks from the date of that meeting, except for the RFAI requiring analyses. The responses to those RFAI were to be provided in about two months.

Sincerely,

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
As stated

cc w/enclosure:
see next page

cc: Mr. William L. Porter
Duke Power Company
P. O. Box 2178
422 South Church Street
Charlotte, North Carolina 28242

J. Michael McGarry, III, Esquire
DeBevoise & Liberman
700 Shoreham Building
806-15th Street, NW.,
Washington, D.C. 20005

Oconee Public Library
201 South Spring Street
Walhalla, South Carolina 29691

ENCLOSURE 1

REQUESTS FOR ADDITIONAL INFORMATION

1. Provide a description of the Oconee fire protection administrative controls which shows how the NRC guidelines are met.

2. Identify the systems and instrumentation required to achieve safe shutdown in a fire situation.

3. The routing of instrumentation, power, and control cables associated with safe shutdown systems should be reviewed to determine the separation of redundant cables. Provide the results of this review for the Turbine Building, Auxiliary Building, Block House, Reactor Building, and Keowee Hydro facility.

4. Clarify the fire hazards analysis to identify separate fire areas, and the rating of fire barriers separating fire areas.

5. Identify all of those ventilation duct and doorway penetrations of fire barriers which will not be upgraded to a rating equivalent to that required of the fire barrier. Justify not upgrading these.

6. Provide the results of an analysis of the radiological consequences of fires in radwaste areas.

7. Verify that the fire detection system can be powered if the normal station power is lost.

8. Verify that the fire detection system is self monitoring for failures such as opens or shorts.

9. Describe the provisions for audible alarm in the control room indicating water flow in sprinkler and deluge systems.

10. Provide the results of an analysis of the potential for a fire in a safety-related area causing loss of both regular and emergency lighting to areas providing access to the fire.

11. Provide details on the reactor coolant pump oil collection systems.

12. Provide information on high pressure service water pump auto-start circuit, and describe the potential for a fire causing loss of the auto-start capability.

13. Provide the data sheet on the "Armaflex" foam insulation.

14. Verify that the oil fired boiler conforms to NFPA 85, "Oil-and Gas-Fired Watertube Furnaces-One Burner, '73".

ENCLOSURE 2

POSITIONS

1. Hose Stations - Hose stations should be located at sufficient points so that all safe-shutdown and large fire hazard areas in the Auxiliary and Turbine Building and Keowee Facility may be reached with the 100 feet of hose located at the hose stations.

2. Double leafed fire doors should be provided with closure "coordinators" to assure that doors close properly.

3. Double glass doors should open into the Auxiliary Building so that these doors will not impede closure of the sliding fire doors.

4. Where the cable study shows the cables for redundant safe shutdown systems are in proximity or exposed to a common fire hazard, adequate barriers, suppression, or re-routing should be provided so that redundant systems are not exposed to a fire. If the redundant cables are in the cable spreading or equipment rooms, one set should be routed outside of the area due to the fire loading in these rooms. An alternative would be to provide a remote shutdown station with adequate controls and instrumentation to reach hot-shutdown, with the capability to reach cold shutdown by manually actuating breakers and operating valves. Details should be provided as to how this position will be implemented.

5. Auxiliary rooms around the control room should be separated from the control area by at least one hour doors and barriers.

6. Propane tanks outside the turbine building should be moved, or provided with excess flow valves and have the bottles strapped in place.

7. Cloth identification tags should be replaced with non-combustible tags in the Unit 1 cable spreading room.

8. Certain penetrations were noticed which should be sealed:

   (a) Flexible "greenfield" conduit penetrations into the Unit 1 and Unit 2 control room should be sealed inside the conduit;

   (b) The metal plates in the floor between the Unit 1 and 2 control room and cable spreading rooms should be upgraded to three-hour fire-rated; and

   (c) Bus duct penetrations in the barrier between the transformer and switchgear in the block house should be sealed.

9. Smoke detectors should be located in all safe shutdown areas, with an adequate number at ceiling level. Details identifying the quantity of detectors to be located in each area after the modifications should be provided.

10. Water or halon type 1211 portable fire extinguishers should be provided in the control rooms.

11. Fire doors separating redundant safe shutdown equipment or protecting safe shutdown equipment from large fire hazards should be locked, alarmed, or provided with a fire sensitive closure device.

12. Portable smoke purge fans and portable ductwork should be provided.

13. Two spare air bottles and a six-hour supply should be provided for each air mask required for fire brigade personnel and operators.

14. Fixed repeaters should be provided to allow use of portable radio communications in the reactor building.

15. Portable handlights should be provided for fire brigade use.

16. A single type of hose nozzle that goes through the spray stream before going to the straight stream should be provided for all interior hose stations.

17. Cable penetration fire stops should be tested to demonstrate a fire rating equivalent to that required for the fire barrier in which the penetration is used. The tests should be performed in accordance with ASTM E-119, with the following exceptions:

    (a) The cables used in the test should include the cable insulation materials used in the facility.

    (b) The test sample should be representative of the worst case configuration of cable loading, cable tray arrangement and anchoring, and penetration firestop size and design. The test sample should also be representative of the cable sizes in the facility. Testing of the penetration fire stop in the floor configuration will qualify the firestop for use in the wall configuration also.

    (c) Cable penetrating the firestop should extend at least three feet on the unexposed side and at least one foot on the exposed side.

    (d) The firestop should be tested in both directions unless the firestop is symmetrical.

    (e) The firestop should be tested with a pressure differential across it that is equivalent to the maximum pressure differential a firestop in the plant is expected to experience.

    (f) Temperature levels of the cable insulation, cable conductor, cable tray or conduit, and firestop material should be recorded for the unexposed side of the firestop.

    (g) Acceptance criteria - the test is successful if:

        (1) The cable penetration firestop has withstood the fire endurance test without passage of flame or ignition of cables on the unexposed side for a period equal to the required fire rating, and

(2) The temperature levels recorded for the unexposed side are analyzed and demonstrate that the maximum temperatures are sufficiently below the cable insulation ignition temperature, and

(3) The firestop remains intact and does not allow projection of water beyond the unexposed surface during the hose stream test.

ENCLOSURE 3

LIST OF PARTICIPANTS

NRC Staff

H. George (DOR)
J. Knight (DOR)
D. Neighbors (DOR)
F. Jape (I&E)

NRC Consultant

L. Herman - Rolf Jensen & Associates
J. Riopelle - Private Consultant

Duke Power Company Staff

J. Smith
M. Tuckman
J. Hendricks
W. Itin
D. Arrant
D. Dukes
R. Bond
J. McIntosh
R. Brachett
R. Snyder
W. Cross
R. Nichols
E. Brockman
W. Foley

Duke Power Company Consultant

N. Allen, Private Consultant